How large do second-generation migrants and natives differ in terms of human capital accumulation and why? Empirical evidence for France

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Abstract

This paper analyses the differences in the determinants and patterns of the accumulation of human capital for second-generation immigrants relatively to natives for the French case. We use the *Training and Occupational Skills* survey to conduct our econometric analysis, where we distinguish the natives, the second-generation immigrants from 'North Africa', 'Southern Europe', 'Northern and Western Europe' and 'Eastern Europe' origins. We don't observe striking differences in the determinants between the second-generation immigrants as a whole and the natives. Moreover, the 'second-generation immigrants' group is a heterogeneous one. The significant determinants as well as the magnitude of the impact of these determinants substantially differ between the natives and the two main considered origins. There seems to be a lower 'determinism' through parental education for the 'Southern Europe' and 'Northern and Western Europe' origins than for the 'North Africa' and Eastern Europe origins, but differences in intergenerational correlations of education could be explained by parental transmission of education and/or by selection effects of the migrants. The Blinder-Oaxaca decomposition shows that parental endowments in education account for a significant part of the mean education differences according to the origin while some others factors (individual characteristics) are also relevant to explain these differences. But we find evidence for significant differences in parental transmissions of education *only for the 'North Africa'-natives pair*.

Key-words: accumulation of human capital, intergenerational mobility, immigrants.
JEL Classification*:* J1, J24, J62.

1. Introduction

People who are born in a same country but whose parents' countries of origin are different may exhibit different patterns of education or labor markets outcomes.

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Using French data, this study focuses on educational outcomes of children of immigrants (second-generation immigrants) and analyses the differences in the determinants and patterns of the accumulation of human capital[1] for them relatively to the natives. In particular, we analyse on these differences for the second-generation immigrants from different origins: the 'Northern Africa', 'Southern Europe', 'Northern and Western Europe' and 'Eastern Europe' origins.

Since the seminal work of Chiswick (1988), a large literature has developed that analyses the impact of belonging to ethnic groups or to second- (or latter) generation of immigrants on educational or labour market outcomes. This literature notably exhibits some levels of achievement at test scores or educational attainment of second-generation migrants (SGM) that are generally equal, or even frequently superior to those of natives (Rong and Grant, 1992; Kao and Tienda, 1995; Chiswick and DebBurman, 2003; Algan et al., 2010; Dustman, 2012). The literature has also put in evidence some substantial heterogeneity in labour or educational achievement between ethnic groups (Borjas, 1995; Waters and Eschbach, 1995; Gang and Zimmerman, 2000; Chiswick and DebBurman, 2003; Bauer and Riphahn, 2007; Kessler and Safi, 2010). Several recent works have been focused on the impact of 'ethnic' origin or to have immigrant parents on educational or labour market outcomes for the French case. For instance, Brinbaum *et al.* (2010) show the large heterogeneity of migrants and their descendants in terms of education according to the country of origin. Domingues Dos Santos and Wolff (2011) analyse the differences in the impact of human capital parental background on the educational attainment for different ethnic groups of second-generation migrants. They show that, if differences coming from the country of origin or the fluency in French are significant, the skills of the immigrants is the major explanatory factor for the human capital accumulation of the young generation. The disadvantage of second-generation immigrants in terms of various labor market outcomes (access to employment, employment status, earnings…) is also stressed by many works (Meurs *et al.*, 2006; Lefranc, 2010; Meurs and Pailhé, 2010). Some studies have underlined the specific disadvantages for children of immigrants from Maghreb notably in terms of employment or stable employment (Meurs *et al.*, 2006; Meurs and Pailhé, 2010; Obka, 2012).

The differences in education or labour market outcomes between different 'origins' may be partly explained by differences in preferences or tastes in schooling (and that may be transmitted from one generation to another), discrimination or differential investment productivity (Chiswick, 1988). Intergenerational transmissions can play an important role in these features, as initial characteristics in schooling or earnings may be largely transmitted from one generation to the next (Borjas, 1992), the empirical evidence being more and more documented (see *e.g.* D'Addio, 2007). In particular, the recent literature also provides evidence on intergenerational transmission of human capital and intergenerational mobility regarding second-generation migrants *vs* natives (Hammarstedt and Palme, 2006; Bauer and Riphahn, 2007; Niknami, 2010). Moreover, the impact of the characteristics of the neighbourhood[2] on the accumulation of human capital (Borjas, 1995; Haveman and Wolfe, 1995) should also be stressed. The presence of 'ethnic capital' that would act as a human capital externality could also influence the educational outcomes (Borjas, 1995). Finally, the difference in terms of pattern of human capital accumulation

[1] In that study, human capital is considered in its narrow definition, *i.e.* the education level of an individual.

[2] These characteristics may largely differ between natives and second-generation migrants.

according to the origin may also be explained by the endowments in parental education (i.e. of the first-generation migrants). Indeed, there might be some 'selection effects' of the migrants in terms of skills that may differ according to their origin: the literature suggests that higher bilateral migration costs favour positive selection (*i.e.* higher education levels of migrants, in average) while lower bilateral migration costs favour negative selection (Chiquiar and Hanson, 2005; McKenzie and Rapoport, 2010). This could explain why (parents) migrants from 'different origin' have different average levels of education. This feature has already been stressed for the case of the migrants in France (Brinbaum *et al.*, 2010). Furthermore, the parents that have emigrated in France may adjust their education decisions for their children (the second-generation migrants) to the local labor and education markets conditions: it could induce some similarity in the education choices whatever the origin and finally explain the differences of pattern in human capital accumulation for different origins.

This study analyses the differences in the determinants and patterns of the accumulation of human capital for second-generation immigrants relatively to natives for the French case. In particular, we analyse these differences for the second-generation immigrants from the 'Northern Africa', 'Southern Europe', 'Northern and Western Europe' and 'Eastern Europe' origins. We contribute to the literature by focusing on the difference in the determinants of human capital accumulation (and especially parental background) between different groups of individuals born in France, the second-generation migrants and the natives. In particular, we investigate to which extent the differences in education levels between SGM come from differences in parental endowments in education or from differences in intergenerational transmissions of human capital. Our paper is structured as follows. The section 2 describes the data and presents some descriptive statistics as well as the evidence of intergenerational mobility for second-generation migrants and natives. We then describe the empirical strategy in section 3. Section 4 presents and discusses the results. Section 5 concludes.

2. Data and descriptive statistics

2.1. Data

The 2003 Formation et Qualification *survey and the information about migrants*
We use the *Formation et Qualification* (FQP, Training and Occupational Skills) survey which is collected by the French National Institute of Statistics and Economic Studies (*Insee*) every 8 or 10 years since 1964 in France. The FQP 2003 survey that we use contains two types of information about the ascendants of the surveyed individuals which allow identifying individuals who have a 'migration' origin from the previous generation: the country of birth and the nationality at birth of both parents. It firstly allows us to distinguish between the 'native' individuals from the individuals who belong to the 'second-generation of immigrants', all born in France[3]. This source

[3] The recent *Trajectoire et Origines* (TeO) survey lead by the French INED (National Institute of Demographic Studies) is a also a rich source of data for migrants and their descendants. See Beauchemin *et al.* (2010) for a presentation of the data and some first results obtained with the survey.

of data is statistically representative at the national level and permits to conduct studies in the fields of training, education, professional mobility or intergenerational mobility. It represents a major source to study the determinants of human capital accumulation and intergenerational mobility for France.
The FQP 2003 survey is the last one available for France and contains around 40 000 individual observations. It contains information on both surveyed individuals and their parents in terms of education or occupational status, as well as information about the occupational status about the grandparents, and also other individual of familial characteristics. In that paper, a 'native' is defined as one individual born in France and whose both parents are French-born and born in France[4]. A second-generation immigrant is one individual born in France but whom at least one parent is born abroad. As FQP 2003 provides information on groups of countries of origin[5], it allows distinguishing the individuals who come from North Africa or Southern Europe, 'Northern and Western Europe' and 'Eastern Europe' [6], representing the largest share of the second-generation immigrants in the sample.
Finally, we shall conduct our analysis on individuals who have achieved their studies to have a correct measure of their level of schooling. We then restrain the sample to people who are 28 years or above at the date of survey. Indeed, at this age, the very largest share of the individuals has finished its schooling[7]. This criterion being exogenous, no bias is introduced by this procedure. We also restrain the sample to individuals who are not more than 55 years old, as specific conditions for accumulation of human capital may exist in France until 1945-1948 (pre-second world war, war period, and just-after war period).
The final sample is composed of 2859 second-generation immigrants and of 18575 natives in our sample. In the sample, 1046 second-generation immigrants have a North African origin, 1131 second-generation immigrants have a Southern Europe origin, 354 second-generation immigrants have a 'Northern' or 'Western Europe' origin and 248 have an Eastern Europe origin.

2.2. Summary statistics and educational intergenerational mobility

Tables 1a and 1b provide some summary statistics on educational attainment[8] and familial background on different sub-populations: second-generation immigrants as a

[4] Please note that the criterion is not that of nationality (according to the French Law, a child is *French born* if at least one of his parents is French at the moment of his birth or if at least one of his parents is born in France).
[5] We choose to select these sub-samples according to the number of observations in the sample for these origins, the other origins representing too few observations. Mœurs and Pailhé (2010) or Lefranc (2010) focus on the "North Africa" and 'Southern Europe origin in their studies. Please also note that the literature provides no evidence of disadvantages for the 'Northern Africa' migrants in terms of educational outcomes in France (*e.g.* Vallet and Caille, 1999; Lefranc, 2010). But, their "disadvantages" seem obvious on the labour market when controlling for education and social background, opening the interpretation for discriminations (*e.g.* Meurs et al., 2006; Meurs and Pailhé, 2010).
[6] In the 20th century, France has a rich history of immigration. In the 1920's and the 1930's, Italians and Polish represent a large share of the immigrants. In the 1945-1974 period Spanish, Portuguese and migrants from Africa (particularly from Northern Africa) but also from Hungaria represent an important part of the new migration wave (see *e.g.* De Wenden, 2012).
[7] This corresponds to 10 years of schooling after the *Baccalauréat* (A-level grade), *theoretically* (i.e. without any break or repeated grades). In the 2003 FQP 2003 survey, only 1.43% of the 28 years old and more have not finished their initial studies at the time of the survey.
[8] The main French levels of education (diplomas) are exposed in Appendix A.1. Note that we consider seven levels for the surveyed individual, and only six for his parents (the six first levels). We also use

whole groupe, natives, second-generation immigrants from North Africa, Southern Europe, Northern and Western Europe, Eastern Europe.

There is no striking difference between the average educational attainments of the second generation immigrants, as a whole group, to that of the natives (table 1a). Parental years of schooling of second-generation migrants are smaller than those of the natives (the only exception is the case of the mother's education, *first definition*). We observe a difference in the average schooling years for the benefit of the 'North Africa' second generation migrants relative to the natives when the total years of schooling are considered. When the schooling years of the highest grade are considered, there is rather an advantage for the natives. Parental education (mother's, father's or the most educated parents) is in average higher for the 'North Africa' than for the 'native' origin[9]. The situation for the Southern Europe sgm is the opposite to that of North African sgm: parents are less educated in average that the parents of the natives. In addition, this population is a little less educated in average that the natives, according to the indicators. In average, the 'Northern and Western Europe' sgm and the Eastern Europe sgm are a little less educated than the natives; but the average years of schooling of the parents of the first group are very close to the ones of the natives, while for the second group the indicators are smaller.

Table 1b presents the detailed picture of the highest grades of individuals and their parents, as well as other family background characteristics, by sub-population. Clearly, as a whole the second generation immigrants have an advantage relatively to the natives for the highest diplomas (below "Bac+2" grades). But once again, there is some heterogeneity in the 'second generation immigrant' population. The migrants from 'North Africa' origin have the benefit of having a higher probability to obtain the highest diplomas (and more than the natives) relatively to the 'Southern Europe' or 'Northern and Western Europe' populations (and in these cases, this represents less that the natives). While as a whole the second generation immigrants benefit from rather higher educated parents that the natives', this picture is mostly driven by 'North Africa' and 'Northern and Western Europe' origins (Southern European parents have clearly a disadvantage in that perspective).

Finally, the parental 'blue collar' socio-professional category (French *PCS*, *professions et catégories socio-professionnelles)* is more represented among second-generation immigrant population, and even more largely in the 'Eastern Europe' and 'Southern Europe' samples. There is the same proportion of 'executive' fathers between natives and second-generation population as a whole, but a little more in the 'North Africa' and 'Northern and Western Europe' samples and much less in the 'Southern Europe' sample.

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two different definitions for the years of schooling. The first one is the duration of schooling in years corrected for breaks of repeated years during scholarship, we note the corresponding variable « years of schooling (1) ». The second definition is the equivalent of years of education for the highest diploma obtained by an individual (corresponding variable: « years of schooling (2) »): for example, for a *A*-grade level, we will associate a duration of schooling of 12 years. See also footnote 11 about the measures for parental education used in the econometric approach.

[9] This observation may seem somewhat surprising as it indicates a non-disadvantage for parents from North Africa relatively to those of the natives. But is shall be noted that the parents of the surveyed individuals are born largely before 1945, and the development of the education systems permits only to give some high school degree (or even elementary degrees) most at the time (the rising in education for France is continuous in the 20th century and is such that, from the FQP data, it can be computed that the cohort born are 1930 completed around 8 years of schooling years and the one born in 1950 complete in average around 10 years of schooling). Hence, even if some differences may exist (larger share of the population with high degree of diploma in France), these differences may be scarce at the 'macro' level or not visible through the "years of schooling" indicator around 1950. More generally, it could underline the existence of 'positive selection' for this origin as hypothesized in section 1.

Table 1a Summary statistics.

Variable	Second gen. mig.				Natives				North Africa				South. Europe				Northern and Western Europe				Eastern Europe			
	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max
years of schooling (1)	*12.05*	*3.25*	*2*	*20*	*11.93*	*3.15*	*2*	*20*	*12.48*	*3.24*	*2*	*20*	*11.79*	*3.01*	*2*	*20*	11.45	3.48	*3*	*20*	11.41	3.32	*3*	*20*
years of schooling (2)	*10.44*	*3.79*	*5*	*17*	*10.48*	*3.66*	*5*	*17*	*10.20*	*3.80*	*5*	*17*	*10.20*	*3.63*	*5*	*17*	*10.19*	*3.88*	*5*	*17*	*9.92*	*3.88*	*5*	*17*
Father's education																								
years of schooling (1)	*7.93*	*2.81*	*4.15*	*15.99*	*8.17*	*2.76*	*4.21*	*16.10*	*8.49*	*2.95*	*4.15*	*15.94*	*7.22*	*2.16*	*4.47*	*15.78*	8.10	3.11	4.58	15.83	7.11	2.52	4.69	*15.56*
years of schooling (2)	*7.12*	*3.40*	*5*	*15*	*7.45*	*3.40*	*5*	*15*	*7.60*	*3.65*	*5*	*15*	*6.27*	*2.66*	*5*	*15*	*7.61*	*3.64*	*5*	*15*	*6.61*	*3.07*	*5*	*15*
Mother's education																								
years of schooling (1)	*7.80*	*2.44*	*4.69*	*15.94*	*7.78*	*2.37*	*4.53*	*15.99*	*8.39*	*2.58*	*4.69*	*15.94*	*7.14*	*1.81*	*4.85*	*15.88*	7.87	2.79	4.69	15.83	7.10	2.25	4.95	15.67
years of schooling (2)	*6.71*	*3.08*	*5*	*15*	*6.74*	*3.02*	*5*	*15*	*7.24*	*3.37*	*5*	*15*	*5.90*	*2.27*	*5*	*15*	*7.12*	*3.44*	*5*	*15*	*6.27*	*2.74*	*5*	*15*
Most educated parent																								
years of schooling (1)	*8.54*	*2.87*	*4.69*	*15.99*	*8.72*	*2.81*	*4.53*	*16.10*	*9.18*	*2.95*	*4.69*	*15.94*	*7.73*	*2.30*	*4.85*	*15.88*	*8.76*	*3.15*	*4.69*	15.83	*7.78*	*2.66*	*5.01*	*15.67*
years of schooling (2)	*7.71*	*3.62*	*5*	*15*	*8.02*	*3.55*	*5*	*15*	*8.28*	*3.80*	*5*	*15*	*6.34*	*2.74*	*5*	*15*	*8.31*	*3.82*	*5*	*15*	*7.22*	*3.35*	*5*	*15*
Numbers of brothers and sisters	*3.00*	*2.44*	*0*	*17*	*2.67*	*2.19*	*0*	*17*	*3.24*	*2.67*	*0*	*14*	*2.76*	*2.16*	*0*	*14*	2.994	2.48	*0*	*13*	3.056	2.41	*0*	*14*
Rank in brotherhood	*2.72*	*2.01*	*1*	*16*	*2.43*	*1.75*	*1*	*15*	*2.66*	*1.95*	*1*	*13*	*2.70*	*2.00*	*1*	*15*	2.816	2.14	*1*	*12*	2.927	2.01	*1*	*11*
Nb. Obs.	2859				18575				1046				1131				354				248			

Sources: FQP 2003 survey. Computations from the author under STATA.
Note: years of schooling (1) refers to the achieved years of schooling (corrected for breaks or repeated years during scholarship), years of schooling (2) correspond to the completed years of schooling of the highest obtained grade.

Table 1b: Summary Statistics (suite).

Variable	Share of obs. per sub-population					
	Second gen. mig.	Natives	North Africa	Southern Europe	Northern and Western Europe	Eastern Europe
No diploma/CEP	*0.256*	*0.239*	*0.233*	*0.262*	0.296	0.318
'Brevet' level	*0.096*	*0.096*	*0.104*	*0.091*	0.073	0.096
CAP/BEP	*0.266*	*0.285*	*0.243*	*0.318*	0.262	0.237
Baccalauréat	*0.149*	*0.155*	*0.160*	*0.136*	0.135	0.137
Bac+2	*0.102*	*0.111*	*0.108*	*0.091*	0.115	0.108
Bac+3/Bac+4	*0.055*	*0.048*	*0.069*	*0.044*	0.056	0.040
Bac+5 and further	*0.074*	*0.063*	*0.080*	*0.054*	0.059	0.060
Father's education						
No diploma/CEP	*0.698*	*0.635*	*0.634*	*0.803*	0.548	0.766
'Brevet' level	*0.033*	*0.036*	*0.051*	*0.013*	0.016	0.032
CAP/BEP	*0.128*	*0.192*	*0.126*	*0.131*	0.180	0.092
Baccalauréat	*0.049*	*0.057*	*0.064*	*0.023*	0.110	0.048
Bac+2	*0.023*	*0.023*	*0.038*	*0.007*	0.053	0.012
Bac+3 and further	*0.066*	*0.053*	*0.085*	*0.020*	0.090	0.048
Mother's education						
No diploma/CEP	*0.745*	*0.729*	*0.669*	*0.854*	0.638	0.806
'Brevet' level	*0.046*	*0.056*	*0.063*	*0.030*	0.022	0.048
CAP/BEP	*0.087*	*0.110*	*0.108*	*0.068*	0.149	0.060
Baccalauréat	*0.054*	*0.045*	*0.070*	*0.026*	0.081	0.040
Bac+2	*0.033*	*0.036*	*0.043*	*0.011*	0.019	0.012
Bac+3 and further	*0.031*	*0.021*	*0.044*	*0.007*	0.087	0.032
Father's occupational status						
Blue-collar worker	*0.530*	*0.404*	*0.453*	*0.655*	0.460	0.580
Store keeper	*0.112*	*0.122*	*0.103*	*0.129*	0.093	0.108
Executive	*0.085*	*0.084*	*0.116*	*0.030*	0.096	0.064
Intermediate worker	*0.144*	*0.147*	*0.173*	*0.098*	0.194	0.125
Employee	*0.092*	*0.111*	*0.139*	*0.045*	0.096	0.068
Farmer	*0.030*	*0.123*	*0.008*	*0.038*	0.056	0.044
Female	*0.530*	*0.525*	*0.550*	*0.503*	0.548	0.556
Male	*0.470*	*0.475*	*0.450*	*0.497*	0.452	0.444
Divorce of parents during scholarship	*0.099*	*0.078*	*0.115*	*0.084*	0.081	0.072
Nb. Obs.	2859	18575	1046	1131	354	248

Sources: FQP 2003 survey. Computations from the author under STATA.

Table 2 below exhibits the intergenerational correlations between parents and child (surveyed individual)'s education. While the correlations for natives and second generation immigrants are rather close, higher correlations are observed overall for the North Africa' and northern and the 'Northern and Western Europe' samples and smaller for the 'Southern Europe' and 'Eastern Europe' samples. In addition, for all populations except individuals from Southern Europe origin, there is evidence of higher intergenerational correlations between mother and child relatively to the ones between father and child.

Table 2. Intergenerational correlations of education (Pearson coefficients).

Intergenerational link	Second gen. mig.	Natives	North Africa	Southern Europe	Northern and Western Europe	Eastern Europe
Parent-child	0.471 ***	0.474 ***	0.483 ***	0.376 ***	0.541***	0.459***
Mother-child	0.452 ***	0.446 ***	0.468 ***	0.337 ***	0.540***	0.460***
Father-child	0.433 ***	0.438 ***	0.436 ***	0.341 ***	0.498***	0.381***

Source: FQP 2003 survey. Computations from the author under STATA.
Note 1: Significance level for the coefficient: *** at 0.1%.
Note 2: years of schooling (1) refers to the achieved years of schooling (corrected for breaks or repeated years during scholarship)

This section has put in evidence that differences in education attainment as well in intergenerational mobility seem to apply between native and second-generation immigrants of certain origin, with some strong heterogeneity among the second generation migrants population. The next section presents the methodology that we use to analyse these differences, and in particular addresses the question: to which

extent these differences are explained by differences in parental levels of education or in parental transmissions of human capital?

3. Empirical strategy

3.1. Estimations of human capital production functions

We firstly produce estimates from one simple empirical model on the whole sample. This model may be exposed as the following human capital production function, *i.e.* function that link inputs (explaining factors) to the level of education (outcome):

$$EDU^C = \beta_0 + \beta_1 EDU^P + \beta_2 MIG + \sum_j \beta_j X_j + \varepsilon \quad (1)$$

We then run some estimates on different subsamples: second-generation of migrants, natives and second-generation of migrants from North African origin or Southern European origin, from the same empirical model:

$$EDU^C = \beta_0 + \beta_1 EDU^P + \sum_j \beta_j X_j + \varepsilon \quad (2)$$

In these models, EDU^C is an indicator for the human capital level of the individual (the numbers of schooling years corrected for possible breaks or repeated years during scholarship[10]), and EDU^P a variable (or a vector of variables, depending on the cases) for parental human capital[11].
MIG is a vector of variables that indicate the 'origin' (according to the estimations, second-generation migrants, natives, or second-generation migrants from the four considered origins).
X_j represents a vector of parental, familial and individual characteristics (father's socioprofessional category, occurrence of divorce of the parents during scholarship, gender, rank in the brotherhood).
β_1 is a coefficient or vector of coefficients that normally represents, *in 'usual' estimates of human capital production functions*, the degree of intergenerational transmissions of human capital, *i.e.* the degree of education *effectively* transmitted by parents to children. But in this study, we estimate and compare estimates of the human capital production function for different sub-samples, that correspond to

[10] Indeed, the repetition of a grade (or more) during scholarship is a very well-spread practice in France.
[11] We mainly use two different measures for parental education. The first corresponds to the years of schooling of the parent. As this variable is not included in the survey, we generate it from the econometric relationship that exists in the survey between the individual, his level of diploma and his birth cohort (Fabre and Moullet, 2004). Another approach considers the « equivalent » years of schooling of the highest diploma coresponding to the normal duration of schooling to attain that level of education. In an alternative approach, we use indicators of the highest level of parental diploma to account for parental education in certain estimations. Note also that we consider alternatively specifications with both father's and mother's education and specifications with only the most educated parent, as there may be strong collinearity between schooling coefficients for fathers and mothers (Holmlund et al., 2011).

'natives' population and to other origins. As selection effects (that may differ according to the origin) in education levels may have occurred for parents from abroad that have emigrated and should lead to differences in the average "endowments" in parental education according to the origin, we have to be careful in the interpretation of the value of the β_1 coefficient: if it does not represent the 'causal' effect of parental education, this coefficient *does not correspond* to *the degree of intergenerational transmission of education* but a 'net' association of children schooling with parental schooling[12]. We will further address this question in the section 4.2 (discussion).

The equations are firstly estimated by ordinary least square (OLS), by incorporating some cohort fixed effects[13] (FE), as we have a large numbers of cohorts in our database. These fixed effects could account for some unobservable characteristics and specific to groups of cohorts: it could account for evolutions of the French education system and as well corresponds to characteristics of specific waves of migrants. It also could be linked to the fact that the 'migrant' population (the "first" generation: the parents) is not a random sample of the population of their country of origin (see also discussion in section 4.2).

To go further and investigate to which extent the differences in human capital of SGM may be explained by differences in parental levels of education or parental transmission of human capital, we use the Blinder-Oaxaca decomposition method.

3.2. Blinder-Oaxaca decomposition

We perform Blinder-Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973) that allows studying mean outcome differences between different groups. We apply the method to explain the educational attainment of different groups of population (origins), by focusing on five successive pairs of groups of origin: 'second-generation migrants'-natives, 'North Africa'-natives, 'Southern Europe'-natives, 'Northern and Western Europe'-natives and 'Eastern Europe'-natives. Two main types of Blinder-Oaxaca decompositions are commonly used in the empirical literature in labour or education economics (*e.g.* Duncan and Sandy, 2010; Elder et *al.*, 2010): the three-fold and the two-fold decomposition (Jann, 2008).

Our specific model (equation (2)) may be re-written simpler as follow for a considered group of origins *i*:

$$EDU_i^C = \beta_i \ X_i \ + \varepsilon_i \qquad (3)$$

With X_i a vector containing predictors and a constant, β_i the slope parameter and the intercept and ε_i the error term.
The mean outcome difference D_1 between *two considered groups of origins* A and B is:

$$D_1 = E(EDU_A^C) - E(EDU_B^C) \qquad (4)$$

[12] As we proceed to estimations with control variables.
[13] We insert some dummy variables for groups of 5- or 6-years birth cohorts.

It may be expressed as follow for the *three-fold decomposition* (Jann, 2008):

$$D_1 = \left[E(X_A) - E(X_B)\right]\beta_B + E(X_B)(\beta_A - \beta_B) + \left[E(X_A) - E(X_B)\right](\beta_A - \beta_B) \quad (5)$$

The first term corresponds to the share of the difference due to group differences in the predictors ('endowments effects'), the second term measures the shares of differences in the coefficients ('coefficients' part) and the third one is an interaction term between the two first terms ('interaction' part).

The *two-fold decomposition*, firstly proposed by Neumark (1988), considers that some non-discriminatory coefficients vector (β^*) has to be considered to determine the contribution of the differences in the predictors[14]. The mean outcome difference D_2 is such as follow (Jann, 2008):

$$D_2 = \left[E(X_A) - E(X_B)\right]\beta^* + \left[E(X_A)(\beta_A - \beta^*) + E(X_B)(\beta^* - \beta_B)\right] \quad (6)$$

The first component is the share explained by the group differences in the predictors ('explained' part) while the second component represents the 'unexplained' part (effects of differences in unobserved variables).

The decomposition is obtained by using the *oaxaca* command on Stata (see Jann, 2008). The differential in mean outcome is firstly expressed in two of three parts (two-fold or three-fold Blinder-Oaxaca decomposition). Then, a more detailed decomposition is presented, were we group the explanatory variables into three categories: parental education (father's and mother's education or 'most educated parent''s education), other familial characteristics (father's socio-professional category, divorce of the parents) and individual characteristics (gender, rank in the brotherhood, cohort).

4. Results and discussion

4.1. The results

Estimations of human capital production functions

The table 3 below presents the econometric results for the estimations on the whole sample (natives + second-generation immigrants). These first estimations use the traditional years of schooling measures. The columns (1) and (2) report the results of OLS estimates with cohort fixed effects. The importance of parental education is confirmed in these estimations, with a larger effect of mother's education. The table also illustrates the importance of the socio-professional status of the father: the (reference) 'blue collar worker' origin exhibits a disadvantage comparing to the other 'PCS' in terms of accumulation of human capital. The 'Gender' or 'rank in the brotherhood' variables as well as the 'occurrence of divorce' during scholarship all

[14] This vector β^* is estimated in pooled regression over the two groups of origin A and B (for that reason, the two-fold decomposition is sometimes called the 'pooled' decomposition).

have an impact on educational attainment. Finally, the controls for birth cohort are all significant, with a larger benefit for the younger cohorts. In these estimations, the 'Southern Europe' and 'Eastern Europe' origin seems to have a positive impact on educational attainment relatively to the natives (the reference category). The coefficient associated to the 'North Africa' and 'Northern and Western' origins are negative (but not significant for the first group). This could mean that, ceteris paribus, the general form of the human capital accumulation differs between natives and second generation migrants according to the considered origin.

Other estimations on the whole sample are also run by differentiating only natives and 'second generation migrants' (whatever is the origin) and indicates a same pattern (table 3.bis) but hides the heterogeneity in the second generation immigrants group that seems to occur.

Note that the substitution of dummy indicators for parental highest diplomas to parental schooling years don't change the main results (see Appendix, table A.2; column (1)). These first results are confirmed for estimations run by using the alternative measure of the year of schooling (tables A.3 and A.4 in Appendix).

Table 3. Estimations on the whole sample (fixed effects).

		Explained variable: years of schooling(1) (1)	(2)
Intercept		1.725*** (0.016)	1.852*** (0.143)
Father's years of schooling (1)		0.106*** (0.006)	- -
Mother's years of schooling (1)		0.175*** (0.007)	- -
Most educated parent's years of schooling (1)		- -	0.206*** (0.006)
Father's socioprofessional category (PCS)	Blue collar worker	*Ref.*	*Ref.*
	Shopkeeper	0.089*** (0.005)	0.089*** (0.005)
	Executive	0.198*** (0.006)	0.210*** (0.006)
	Intermediate Professions	0.129*** (0.004)	0.134*** (0.004)
	Employee	0.076*** (0.005)	0.077*** (0.005)
	Farmer	0.069*** (0.005)	0.071*** (0.005)
Gender		0.018*** (0.003)	0.018*** (0.003)
Rank in the brotherhood		-0.014*** (0.000)	-0.015*** (0.000)
Divorce of parents during scholarship		-0.059*** (0.005)	-0.057*** (0.005)
Natives		*Ref.*	*Ref.*
North-Africa origin		-0.005 (0.007)	-0.002 (0.007)
Southern Europe origin		0.038*** (0.007)	0.037*** (0.007)
Northern and Western Europe		-0.029** (0.013)	-0.028** (0.013)
Eastern Europe		0.039** (0.016)	0.037** (0.017)
Other origins		0.013 (0.020)	0.017 (0.020)
1948-1953 Cohort		*Ref.*	*Ref.*
1954-1958 cohort		0.085*** (0.005)	0.089*** (0.005)
1959-1963 cohort		0.123*** (0.005)	0.130*** (0.005)
1964-1968 cohort		0.148*** (0.005)	0.160*** (0.005)
1969-1975 cohort		0.198*** (0.005)	0.215*** (0.005)
R^2		0.32	0.32
Nb. of observations		21434	21434

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata
Note 1: ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note 2: years of schooling are in log.

Table 3bis. Estimations on the whole sample (fixed effects).

	Explained variable: years of schooling(1) (1)	(2)
Second-generation migrants	0.014*** (0.004)	0.014*** (0.004)

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata
Note 1: ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note 2: years of schooling are in log.

The first group of estimations has shown some heterogeneity in the group of second generation immigrants as well as apparently not significant differences between accumulation of human capital for 'natives' and for 'North Africa' origin. But significant differences being from other origin have also been stressed. Also, this first approach can only put in evidence some "fixed" effect of the belonging to some particular origin comparing to the natives, as some interactions may occur between the 'origin' variable and all the other independent variables. Hence, the next approach estimates some education production functions by subpopulation: second-generation migrants, natives, second-generation migrants from North Africa, from

Southern Europe, from 'Northern and Western Europe' and finally from Eastern Europe.
The table 4 below presents the econometric results by OLS with cohort fixed effects. There is evidence of heterogeneity in the determinants of educational attainment among second-generation immigrants as well as between this group and the 'natives' group[15]. First, let us focus on the impact of parental education (coefficients in the second to fourth lines in the table)[16]. On average, the second-generation immigrants group doesn't seem to differ significantly from the 'natives' group in terms of elasticities: 0.210 *vs* 0.205, respectively when considering *the most educated parent* (columns (5) and (6)), 0.094 and 0.18 *vs* 0.108 and 0.172 when considering the father's and mother's education (columns (1) and (2)). But, when we look further among SGM, lower coefficients (hence lower association between parental and children's education) are observed for the 'Southern Europe' and 'Northern and Western' origins (exception: for the fathers' coefficient of the first origin). Higher coefficients are observed for the 'North Africa' and 'Eastern Europe' origin (columns (3) and (7)) relatively to Natives and, above all, to the 'Southern Europe' origin. Hence, there seems to be a lower 'determinism' through parental education for 'Southern Europe' and 'Northern and Western' origins and higher determinisme for the 'North Africa' and 'Eastern Europe' origin. Finally, The estimated coefficients found for father's education are not significant for the Northern and Western Europe and Eastern Europe origins, but interestingly it is very significant for mother's education which confirms that mothers' education seems to have a stronger impact on the education of their children than the fathers' whatever the origin.

As regards the impact of other variables (French PCS, gender, rank in the brotherhood, divorce of parents), we don't observe striking differences *between the 'natives' and the second-generation immigrant as a whole*. But, some differences occur between the natives and the two observed origins.

According to the estimations, the 'North Africa' group doesn't seem, *ceteris paribus*, affected by the gender for its accumulation of human capital, nor by the rank in the brotherhood. The impact of the variable 'to have a father employee' is not significantly different from the 'blue collar worker' origin (the reference for the French PCS in the estimations). In addition, the magnitude of the coefficients for these variables is lower than those for the natives (an exception: the coefficient attached to the 'Farmer' father). There is a larger benefit in the educational attainment for the younger cohorts. But the estimated coefficients for belonging to specific cohorts are much higher than for the natives (around twice or more).
For the second-generation migrants from Southern Europe, all variables inserted in the econometric estimations have an impact on educational attainment. But the impact of these variables is, except for gender, lower in magnitude that those for the natives. Once again, there is a larger benefit in the educational attainment for the younger cohorts. The coefficients for the belonging to specific cohorts are a little higher in magnitude than in the natives' case. Finally, the *R*-square computed is much lower for the Southern Europe case (0.24), comparing to the 'natives' or the North Africa cases (0.32). Hence additional variables that are not taken into account

[15] This is confirmed by the Chow test whose null hypothesis *Ho* is the equality between the coefficient of the same variables of two samples. Indeed, the Chow tests performed conducts to reject, for all pairs of 'natives'-'non-natives', the null hypothesis.
[16] As schooling measures for the individual and parental levels are in log, it corresponds to elasticities.

(unobserved factors) are susceptible to play a role in the accumulation of human capital for the 'Southern Europe' origin.
For the second-generation migrants from Northern and Western Europe, most of the other explanatory variables are significant with the notable exception of the 'divorce of the parents' or the 'gender' indicators. The magnitude of the coefficient associated to the significant explanatory variables is higher. For instance, the estimated coefficients for belonging to specific cohorts are much higher than for the natives. The *R*-square for this estimation is also quite larger than the one for the natives sample.
Finally, for the second-generation migrants from Eastern Europe, the only socio-professional category's origin that differ from the 'reference' one (blue-collar worker) is the executive one. Gender and rank in the brotherhood are significant but differ in magnitude and/or sign. Once again, the estimated coefficients for belonging to specific cohorts are much higher than for the natives, except for the cohort 1969-1975.

Similar overall results are obtained when using parental highest diplomas as education indicators (Table A.2, columns (2) to (7), Appendix). These results are also confirmed by using the "alternative" measure for years of schooling (Table A.5 for Appendix).

Table 4. Econometric estimations by origin (fixed effects).

		Explained variable: years of schooling(1)											
		Sec. Gen. Mig.	Natives	North Africa	Southern Europe	Northern and Western Europe	Eastern Europe	Sec. Gen. Mig.	Natives	North Africa	Southern Europe	Northern and Western Europe	Eastern Europe
		(1)	(2)	(3)	(4)	(5)	(6)	(1bis)	(2bis)	(3bis)	(4 bis)	(5 bis)	(6 bis)
Intercept		1.724*** (0.049)	1.760*** (0.017)	1.467*** (0.095)	1.773*** (0.085)	1.847*** (0.135)	1.798*** (0.162)	1.845*** (0.044)	1.857*** (0.015)	1.596*** (0.093)	1.895*** (0.067)	1.957*** (0.125)	1.951*** (0.135)
Father's years of schooling (1)		0.094*** (0.021)	0.108*** (0.007)	0.117*** (0.034)	0.115*** (0.037)	0.017 (0.053)	0.070 (0.070)	- -	- -	- -	- -	- -	- -
Mother's years of schooling (1)		0.187*** (0.021)	0.172*** (0.007)	0.229*** (0.032)	0.144*** (0.038)	0.165*** (0.065)	0.251*** (0.082)	- -	- -	- -	- -	- -	- -
Most educated parent's years of schooling (1)		- -	- -	- -	- -	- -	- -	0.210*** (0.020)	0.205*** (0.006)	0.270*** (0.033)	0.188*** (0.032)	0.121*** (0.059)	0.230*** (0.065)
Father's socioprofessional category (PCS)	Blue collar worker	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Shopkeeper	0.063*** (0.016)	0.093*** (0.005)	041* (0.023)	0.049** (0.024)	0.199*** (0.051)	0.004 (0.071)	0.061*** (0.016)	0.094*** (0.005)	0.044* (0.023)	0.047** (0.024)	0.202*** (0.053)	0.004 (0.071)
	Executive	0.159*** (0.019)	0.202*** (0.006)	0.148*** (0.028)	0.143*** (0.040))	0.293*** (0.047)	0.103* (0.061)	0.173*** (0.018)	0.214*** (0.006)	0.162*** (0.028)	0.147*** (0.039)	0.313*** (0.046)	0.117* (0.065)
	Intermediate Professions	0.089*** (0.013)	0.135*** (0.005)	0.074*** (0.021)	0.098*** (0.024)	0.185*** (0.040)	0.041 (0.047)	0.091*** (0.013	0.140*** (0.005)	0.074*** (0.021)	0.098*** (0.024)	0.190*** (0.041)	0.048 (0.046)
	Employee	0.042** (0.016)	0.081*** (0.005)	0.030 (0.023)	0.081** (0.036)	0.136*** (0.045)	-0.051 (0.077)	0.039** (0.017)	0.081*** (0.005)	0.028 (0.023)	0.081** (0.036)	0.130*** (0.046)	-0.074 (0.076)
	Farmer	0.050** (0.025)	0.072*** (0.005)	0.135* (0.074)	0.046 (0.033)	0.068 (0.065)	0.053 (0.082)	0.049** (0.025)	0.074*** (0.005)	0.125* (0.072)	0.045 (0.033)	0.064 (0.066)	0.052 (0.083)
Gender		0.026*** (0.009)	0.017*** (0.003)	0.016 (0.014)	0.071*** (0.014)	-0.005 (0.027)	-0.089** (0.036)	0.024*** (0.009)	0.017*** (0.003)	0.014 (0.014)	0.070*** (0.014)	-0.0103 (0.027)	-0.091** (0.036)
Rank in the brotherhood		-0.012*** (0.002)	-0.015*** (0.001)	-0.002 (0.004)	-0.013*** (0.003)	-0.019*** (0.007)	-0.030*** (0.011)	-0.013*** (0.002)	-0.016*** (0.001)	-0.003 (0.004)	-0.014*** (0.003)	-0.020*** (0.007)	-0.030*** (0.011)
Divorce of parents during scholarship		-0.052*** (0.015)	-0.060*** (0.006)	-0.038* (0.022)	-0.051** (0.025)	-0.048 (0.055)	-0.072 (0.060)	-0.051*** (0.015)	-0.058*** (0.006)	-0.040* (0.022)	-0.048* (0.025)	-0.042 (0.055)	-0.081 (0.059)
1948-1953 cohort		*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
1954-1958 cohort		0.126*** (0.019)	0.080*** (0.006)	0.232*** (0.049)	0.110*** (0.028)	0.159*** (0.041)	0.169*** (0.043)	0.131*** (0.019)	0.084*** (0.006)	0.235*** (0.050)	0.114*** (0.028)	0.165*** (0.041)	0.173*** (0.044)
1959-1963 cohort		0.145*** (0.017)	0.120*** (0.005)	0.228*** (0.045)	0.150*** (0.026)	0.165*** (0.040)	0.187*** (0.044)	0.153*** (0.017)	0.127*** (0.005)	0.236*** (0.046)	0.156*** (0.026)	0.171*** (0.040)	0.191*** (0.044)
1964-1968 cohort		0.162*** (0.017)	0.146*** (0.005)	0.244*** (0.044)	0.162*** (0.026)	0.180*** (0.047)	0.233*** (0.054)	0.176*** (0.017)	0.157*** (0.005)	0.258*** (0.045)	0.174*** (0.026)	0.192*** (0.046)	0.250*** (0.053)
1969-1975 cohort		0.225*** (0.017)	0.193*** (0.005)	0.326*** (0.043)	0.207*** (0.027)	0.283*** (0.044)	0.183*** (0.079)	0.243*** (0.016)	0.211*** (0.005)	0.346*** (0.044)	0.222*** (0.026)	0.296*** (0.043)	0.202*** (0.080)
R^2		0.29	0.32	0.32	0.24	0.43	0.31	0.29	0.32	0.31	0.24	0.43	0.31
Nb. of observations		2859	18575	1046	1131	354	248	2859	18575	1046	1131	354	248

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata
Note (1): ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note (2): years are schooling are in log.

Blinder-Oaxaca decomposition

We perform Oaxaca decomposition to explain the differential in the mean outcome (education level) between pairs of groups of origin: 'North Africa'-natives, 'Southern Europe'-natives, 'North Africa'-'Southern Europe', 'Northern and Western Europe'-natives and 'Eastern Europe'-natives. The explanatory variables are grouped in three categories [17] : parental education, other familial characteristics and individual characteristics.

At first we proceed to the three-fold Blinder-Oaxaca decomposition[18] (table 5).
From a general point of view, the difference in mean education levels is mostly explained by differences in endowments. We mainly comment the estimations where education of both parents is considered for parental education (table 5, columns (1) to (5)).
Firstly, let us observe the decomposition for the 'second generation immigrants'-'natives' pair (column (3)). The difference in mean outcome is mostly explained by endowments and coefficients (the impact being from opposite directions).The 'endowments' part is mainly explained by individual characteristic and 'other familial characteristics' (parental education account for only a small part of it). The coefficient part is mostly explained by other familial characteristics while parental education does not appear as significant. All the components of the interaction part are non-significant.
For the 'North Africa-natives' pair (column (2)), the difference in mean outcome (0.0460) is highly explained by (differences in) endowments (0.0493). The contribution of the (differences in) econometrically estimated coefficients is around three times lower (-0.0166). The interaction part is also much lower but not significant as a whole. The *endowment* part is firstly explained by individual characteristics (rank in the brotherhood, gender and cohort) for two-thirds and by parental education (education of both of the parents) for a one-third. Other familial characteristics (socio-professional category of the father, divorce of the parents) account for nothing of the differential in the endowments. The coefficient part if mainly explained by the parental education which underlines the importance of parental transmissions of education and that differences into the transmission occur between the two groups 'North Africa' and 'natives' (higher transmissions, here). Individual characteristics represent only around one fourth of the impact of parental education. The interaction part is not significant as a whole but its components (except 'familial characteristics') are significant: individual characteristic represents the larger part of this interaction between 'endowments' and 'coefficients'.
As shown in column (3), the difference in mean outcome for the pair 'Southern Europe'-natives (0.0101) is rather low and not significant *as a whole*. But two components of this difference are significant: the 'endowments' part and the 'coefficients' part (a little less). But in this case, the 'endowment' part is explained by differences in 'other family characteristics' endowments and then in parental education (individual characteristics are not significant to explain this part). The

[17] parental education (father's and mother's education or 'most educated parent''s education), other familial characteristics (father's socio-professional category, divorce of the parents) and individual characteristics (gender, rank in the brotherhood, cohort)
[18] Note that we have left the explained variable (years of schooling) in log which gives 'small' values but doesn't change the variability of the individual's level of education.

'coefficient' part is mostly explained by individual characteristics, and parental education is not significant.
We then observe the decomposition for the 'Southern Europe'-'North Africa' pair (column (4)): the mean outcome difference is significant and is mostly explained by the 'endowments' and the 'coefficients' parts (this one being not significant as a whole). The endowments part is explained for the most part by individual characteristics, while the coefficients part is composed of non-significant sub-parts.
Finally, the decomposition for the 'Southern Europe'-'North Africa' pair (column (5)) stresses a differences in mean outcome explained mainly by the 'endowments' and 'coefficients' parts. The endowments part is mostly explained by parental education and a little more by individual characteristics. The coefficients part is by far explained by individual characteristics (the other components being non-significant).
As shown in columns (1) bis to (5) bis, the results obtained *by using the education of 'the most educated parent'* underline very similar results to the previous and commented ones. It confirms that the results are not depending on the chosen definition for parental education.
Let us sum up the empirical evidence found: the Blinder-Oaxaca decomposition shows that parental endowments in education account for a significant part of the mean education differences according to the origin while some others factors (i.e. individual characteristics) are very relevant to explain these differences. But we find evidence for significant differences in parental transmissions of education *only for the 'North Africa'-natives pair*.

We also ran some the *two-fold* Blinder-Oaxaca decomposition (see Table A6 in Appendix) which distinguishes two parts: one which represents group differences in the predictors and another is the 'unexplained' part. This decomposition globally stresses that, globally, as in the two-fold decomposition method, differences in means values of the predictors (endowments) account for the majority of the mean outcome differences. The obtained results for the 'explained' part which are (or quasi-) the same that the ones obtained for the 'endowments' part in the three-fold decomposition which is normal, by definition. In addition, the unexplained part is (approximately) the addition of the 'coefficients' and 'interaction' part. So we don't develop further as it totally confirms the previous found results.

Table 5: Three-fold Blinder-Oaxaca decomposition

	Parental education : both parents					*Parental education : most educated parent*				
	Gr. 1: SGM Gr. 2: natives (1)	Gr. 1: North Africa Gr. 2: natives (2)	Gr. 1: Southern Europe Gr. 2: natives (3)	Gr. 1: Northern and Western Europe Gr. 2: natives (4)	Gr. 1: Eastern Europe Gr. 2: natives (5)	Gr. 1: SGM Gr. 2: natives (1) bis	Gr. 1: North Africa Gr. 2: natives (2) bis	Gr. 1: Southern Europe Gr. 2: natives (3) bis	Gr. 1: Northern and Western Europe Gr. 2: natives (4) bis	Gr. 1: Eastern Europe Gr. 2: natives (5) bis
Overall										
Mean prediction Group 1	2.451***	2.489 ***	2.433***	2.389***	2.387***	2.451***	2.489***	2.433***	2.389***	2.387***
	(0.005)	(0.008)	(0.007)	(0.017)	(0.019)	(0.005)	(0.008)	(0.007)	(0.017)	(0.019)
Mean prediction Group 2	2.443***	2.443***	2.443***	2.443***	2.443***	2.443***	2.443***	2.443***	2.443***	2.443***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Difference (Gr. 1 - Gr. 2)	0.007	0.046***	-0.010	-0.054***	-0.055***	0.007	0.046***	-0.010	-0.054***	-0.055***
	(0.005)	(0.008)	(0.008)	(0.017)	(0.019)	(0.005)	(0.008)	(0.008)	(0.017)	(0.019)
Diff. endowments	-0.007**	0.049***	-0.050**	-0.027***	-0.093***	-0.007**	0.047***	-0.049***	-0.028***	-0.091
	(0.003)	(0.005)	(0.008)	(0.010)	(0.009)	(0.003)	(0.004)	(0.004)	(0.010)	(0.009)
Diff. coefficients	0.009*	-0.016*	0.032***	-0.020)	0.043**	0.010*	-0.014	0.029***	-0.018	0.041
	(0.005)	(0.014)	(0.009)	(0.013)	(0.021)	(0.005)	(0.014)	(0.008)	(0.013)	(0.020)
Diff. interactions	0.005*	0.013	0.007	-0.006	-0.005	0.004*	0.013	0.009*	-0.007	-0.006
	(0.002)	(0.011)	(0.005)	(0.007)	(0.015)	(0.002)	(0.011)	(0.005)	(0.007)	(0.015)
Breakdown of the 'endowments' part										
Parental education	-0.003**	0.016***	-0.024***	-0.002	-0.031***	-0.004***	0.0108***	-0.022***	-0.001	-0.024***
	(0.001)	(0.002)	(0.001)	(0.004)	(0.004)	(0.001)	(0.002)	(0.001)	(0.003)	(0.004)
Other familial characteristics	-0.010***	-0.000	-0.029***	-0.000	-0.017***	-0.011***	0.000	-0.030***	-0.000	-0.017***
	(0.001)	(0.002)	(0.0020)	(0.003)	(0.004)	(0.001)	(0.002)	(0.002)	(0.003)	(0.004)
Individual characteristics	0.007***	0.032***	0.003	-0.024***	-0.045***	0.007***	0.035***	0.003	-0.026***	-0.049***
	(0.001)	(0.002)	(0.002)	(0.004)	(0.004)	(0.001)	(0.002)	(0.002)	(0.005)	(0.005)
Breakdown of the 'coefficient' part										
Parental education	-0.001	0.135*	-0.037	-0.199	0.027	-0.001	0.137*	-0.033	-0.179	0.013
	(0.051)	(0.077)	(0.090)	(0.137)	(0.160)	(0.051)	(0.073)	(0.071)	(0.126)	(0.140)
Other familial characteristics	0.009**	0.009*	0.009*	-0.014	0.017	0.009***	0.009*	0.010**	-0.014	0.018
	(0.003)	(0.005)	(0.005)	(0.009)	(0.012)	(0.003)	(0.005)	(0.005)	(0.009)	(0.012)
Individual characteristics	0.009	0.029**	0.030***	-0.023	-0.100**	0.009	0.027*	0.030***	-0.024	-0.097**
	(0.009)	(0.014)	(0.011)	(0.024)	(0.042)	(0.009)	(0.014)	(0.011)	(0.024)	(0.040)
Constant	-0.007	-0.191**	0.030	0.217	0.099	-0.007	-0.189**	0.022	0.199	0.107
	(0.056)	(0.090)	(0.093)	(0.153)	(0.175)	(0.056)	(0.087)	(0.074)	(0.142)	(0.153)
Breakdown of the 'interaction' part										
Parental education	0.000	0.004*	0.001	0.002	0.001	0.000	0.003*	0.001	0.000	-0.000
	(0.000)	(0.002)	(0.004)	(0.002)	(0.009)	(0.000)	(0.001)	(0.003)	(0.001)	(0.007)
Other familial characteristics	0.003	-0.010	0.007	-0.000	0.011	0.003	-0.009	0.008	0.000	0.013
	(0.002)	(0.008)	(0.005)	(0.005)	(0.008)	(0.002)	(0.008)	(0.005)	(0.005)	(0.008)
Individual characteristics	0.001	0.018**	-0.000	-0.008	-0.018	0.001	0.019**	-0.000	-0.008	-0.018
	(0.001)	(0.007)	(0.001)	(0.006)	(0.012)	(0.001)	(0.007)	(0.001)	(0.006)	(0.013)

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata with the Oaxaca command.
Note (1): ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note (2): the effects of dummy variables corresponding to categorical indicators (father's socio-professional category and cohorts) have been normalized so that the results of the decomposition do not depend of the choice of the base category (Jann, 2008).

4.2. Interpretation and discussion of the results

The obtained results: selection effects or differences in intergenerational transmissions?

Our econometric results *could* confirm the importance of parental transmissions of education for their child's education. For instance, table 2 underline a higher intergenerational correlations for 'North Africa' origin relatively to the 'native' origin, and lower correlations for 'Southern Europe' origin. According to our econometric estimations (see tables 4 and A5), intergenerational associations of education are higher for the second-generation migrants from North Africa relatively to the natives and lower for those from Southern Europe, when considering the 'most educated parent''s education indicator. Hence, the intergenerational transmissions could be a major factor explaining the differences in the intergenerational correlations of educations among the different groups, to the extent that the estimated intergenerational associations represent a correct measure of transmissions. But we should stress these features are not verified for the two other origins ('Northern and Western Europe' and 'Eastern Europe'): this cannot be a general feature but at most a part of the explanation.

Furthermore, *there is an alternative explanation to the "intergenerational transmission" story*. As we stressed it earlier in that study, there might be a selection of the (parents) migrants in terms of skills that may differ according to the specific origin and lead to differences in average endowments in (parental) education. The literature suggests that higher bilateral migration costs favour positive selection (*i.e.* higher education levels of migrants, in average) while lower bilateral migration costs favour negative selection (Chiquiar and Hanson, 2005; McKenzie and Rapoport, 2010): this could explain, for instance, why migrants from 'Northern Africa' origin have on average higher levels of education that those from 'Southern Europe' origin (see tables 1a and 1b), this last origin facing lower bilateral migration costs (shorter distance to France, closer living conditions, *etc.*). This hypothesis doesn't seem verified for 'Eastern Europe' origin, while it is not possible to conclude concerning the 'Northern and Western Europe' origin as this group is composed of more or less similar conditions of living but with distance to France that differs considerably according to the country of origin. Whatsoever, the parents that have emigrated in France may adjust their education decisions for their children (the second-generation migrants) to the local and education markets conditions, hence inducing some similarity in the education choices for all origins. As the levels of education of the first generation of migrants from Southern Europe and Eastern Europe have levels of education that are more dispersed and lower in average, there would be higher educational mobility for this origin ("catching-up") and so lower correlation of education levels for this origin relatively to Northern Africa of natives. Hence, difference in the values in the estimated β_1 coefficient for different origins may largely come from 'selection' (differences in initial conditions in terms of parental education). This is an alternative to the hypothesis of differences in intergenerational transmissions of education, as selection could explain between-origins differences in β_1 with same pattern in intergenerational transmission. If this hypothesis applies and as mentioned in section 3, the value of the β_1 coefficient does not represent the 'causal' effect of parental education and so *does not correspond* to *the degree of intergenerational transmissions of education*. In that case, the β_1 coefficient

corresponds to a 'net' association of children schooling with parental schooling by taking into account a set of control variables, but not to intergenerational transmissions.
The found intergenerational correlations of education are lower for 'Southern Europe' and 'Eastern Europe' than for 'North Africa' while there are no significant differences in mean outcome for SGM from 'Southern Europe' *vs* natives: as there are some quite important differences in parental education levels (see supra), this evidence supports the explanation for some *selection effects* and also supports the hypothesis of a catching-up for 'Southern Europe' and Eastern Europe. The two aforementioned hypotheses (selection and differences in the degree of intergenerational transmissions) may also apply at the same time and explain the patterns found in the econometric estimations of human 0capital production functions. The Blinder-Oaxaca decomposition that we have implemented allows us to test these hypotheses. The implemented decomposition has shown that the differences in outcomes means could be, globally, decomposed into two significant parts: the 'endowments' part and the 'coefficient' part. We find that differences in means values of the predictors (endowments, in the 'endowments' [respectively 'explained'] part for the 3-fold Blinder-Oaxaca decomposition [respectively 2-fold decomposition]) account for the majority of the mean outcome differences between sgm and natives. In particular, *parental endowments in education are important in explaining these differences* even if their importance is very limited to explain differences for the 'Northern and Western Europe'-'natives' pair. Some others factors are also relevant to explain the differences in education levels, but we find evidence for significant differences in parental transmissions of education *only for the 'North Africa'-natives pair*. Some other components of the 'endowments' and 'coefficients' parts are also important, and differ in magnitude as well as significance according to the pairs of origin that are considered.

Robustness checks

To observe if different effects may apply according to the education level, we proceed to Blinder-Oaxaca decomposition on all samples of origins for individuals for whom the most educated parent is not characterised by more than 9 years of schooling. The tableau A7 in Appendix reports the found results. Two main conclusions may be drawn from the found results. First, the 'coefficient' part of the decomposition is never explained by differences in *parental education* between the sgm and the natives. Hence, there are no differences in intergenerational transmission of education between for the less educated groups of the two origins that could explain the difference in mean education level. Second, the importance of the 'endowments' part in parental education is largely reduced to explain the differences in mean outcome for pairs of origins, mostly to the benefit of the importance of 'individual characteristics' in explaining these differences. It supports the likely importance of education systems in the rise of education levels (impact captured by the cohort fixed effects), that has allowed for the Southern Europe and Eastern Europe, a relative "catching-up" from one generation to another.
We have already noticed in section 4.1 that results were robust to the definition of parental education (both parents' education *vs* most educated parent's education). The estimations conducted by using alternative definition for parental education (years of schooling corresponding to duration of schooling to complete the highest-level diploma) provide also similar results to those presented in table 4, for instance.

We try to take into account unobservable characteristics in our estimations. We have inserted some (cohort-) fixed effects but that can incorporate some information relative to each 'population', and constant for each set of cohorts. When we run the estimations without fixed effects with OLS, we observe a rise in the coefficient for the parental education variable(s). There is also variation in the coefficient of the other variables, but mostly upward changes. A possible interpretation is that the parental education variable captures many things when there are no fixed effects that may be correlated with the environment of the child. We suppose that the specifications with fixed effects are better because they can take into account some of the unobservable factors. Especially, the results may be robust to some specific 'laws' or event that occurred a certain year and that can impact education (see below for a discussion about the Berthoin Law). But in addition, our sample of 28-55 years second-generation migrants may be highly selected if this group of population has a high likelihood to move out of France[19]. Hence, differences in the estimated coefficients of the cohort dummies might also pick up the influence of non-random selection into migration.

Furthermore, we also ran some instrumental variable (IV) estimations where we attempt to take into account for possible endogeneity in the parental education variables that would come from unobservable characteristics linked to parental education and that would have some impact on children's human capital[20]. But in these estimations, endogeneity of the parental education variables was rejected for the 'migrants' samples and non-significance occurred for many inserted determinants of human capital. 'Literally', the results for the tests that we obtained in these IV estimations signify that parental education is not endogenous, at least for migrants[21]. Further interpretation can't be brought.

By estimating our econometric model with the same set of variables for each of the sample, we obtain in the FE estimations some *R*-square of 0.32 except for the 'Southern Europe' case where an *R*-square of 0.24 was obtained. Similarly, the FE estimations for 'Northern and Western Europe' is significantly higher (R^2 = 0.43). Hence, it is very likely that some unobservable characteristics that may differ between second-generation migrants and natives may play an important role in the accumulation of human capital of some of the second generation migrants.

Finally, an important law was passed in France in 1959 by raising the minimum mandatory schooling age to 16 years old (14 before the law) for scholars born from 1953. We incorporate some cohort-fixed effect in our econometric estimations, to account for differences among the generations: the estimations show evidence of a benefit for the older cohorts relatively to the younger ones (1948-1953 in our econometric analysis). So we are able to assert that our estimations are robust to the likely impact of the Berthoin Law.

[19] And possibly, the children could move to the country where their parents came from.

[20] There are theoretical and empirical foundations for such an endogeneity. The causal impact of parental human capital on children's human capital is more and more questioned (Black et al., 2005; Holmlund et al., 2011), and some studies discuss of potential endogeneity of the parental human capital variable (Lilard and Willis, 1994). In the present study, there might be some unobservable components linked to parental education that may have some impact on children's human capital and that can act differently according the considered 'origin' (some examples: neighborhood effects, tastes or preferences in schooling that would be transmitted from one generation to another).

[21] The results of the IV estimations where parental human capital is endogenized are available from the author upon request.

5. Conclusion

This paper analyses, for the French case, the difference in the determinants and patterns of the accumulation of human capital for second-generation immigrants from different origins relatively to natives. In our study, we distinguish the natives, the second-generation immigrants from 'North Africa' or 'Southern Europe' origins. To perform our econometric analysis, we use the *Formation and Qualification Professionnelle* survey. We don't observe striking differences in the determinants between the second-generation immigrants as a whole and natives. But the 'second-generation immigrants' group is a heterogeneous one. It underlines an important source of heterogeneity in human capital accumulation in France. The significant determinants but also the magnitude of the impact of these determinants, substantially differ between the natives and the other consider origins. There also seems to be a lower 'determinism' through parental education for the 'Southern Europe' and 'Northern and Western Europe' origins than for the 'North Africa' and Eastern Europe origins, but differences in intergenerational correlations of education could be explained by parental transmission of education and/or by selection effects of the migrants. These two explanations may explain a part of the final educational outcomes of second-generation immigrants that, in average, are close or superior to those obtained by the natives. The differences in human capital accumulation between origins are for a significant part due to differences in parental endowments in education while some others factors (i.e. individual characteristics) are also relevant in explaining these differences. But we find evidence for significant differences in parental transmissions of education *only for the 'North Africa'-natives pair*. Further research could investigate to which extent these features are "transmitted" on the labor market to explain the differences of returns on the labour market for second-generation migrants *vs* natives.

References

Algan Y., **Dustman C.**, **Glitz A.** and **Manning A.** (2010), « The economic situation of first and second-generation immigrants in France, Germany and the United Kingdom », *Economic Journal*, 120(542), 4-30.

Bauer P. and **Riphahn R.** (2007), « Heterogeneity in the Intergenerational Transmission of Educational Attainment: Evidence from Switzerland on Natives and Second Generation Immigrants », *Journal of Population Economics*, 20(1), 121-148.

Beauchemin C., **Hamel C.** et **Simon P.** (2010), *Enquête sur la diversité des populations en France. Trajectoires et Origines. Premiers résultats*, Documents de travail, 168, Institut National d'Etudes Démographiques, Octobre 2010.

Black S., **Devereux P.** and **Salvanes K.** (2005), « Why the apple doesn't fall far: understanding intergenerational transmission of human capital », *American Economic Review*, 95 (1), 437-449.

Blinder A. S. (1973), « Wage Discrimination: Reduced Form and Structural Estimates », *The Journal of Human Resources*, 8(4), 436–455.

Borjas G. (1992), « Ethnic Capital and Intergenerational Mobility », *Quarterly Journal of Economics*, 107(1), 123-150.

Borjas G. (1995), « Ethnicity, neighbourhoods, and human capital externalities », *American Economic Review*, 85 (3), 365-390.

Brinbaum Y, Moguérou L., Primon J.-L. (2010), « Parcours et expériences scolaires des jeunes descendants d'immigrés en France», 39-46, *in* **Beauchemin C.**, **Hamel C.** et **Simon P.**, *Enquête sur la diversité des populations en France. Trajectoires et Origines. Premiers résultats*, Documents de travail, 168, Institut National d'Etudes Démographiques, Octobre 2010.

Chiquiar D. and **Hanson G.** (2005), « International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States », *Journal of Political Economy*, 113(2), 239–281.
Chiswick B. (1988), « Differences in Education and Earnings Across Racial and Ethnic Groups: Tastes, Discrimination, and Investments in Child Quality », *Quarterly Journal of Economics*, 103(3), 571-597.
Chiswick B. and **DebBurman N.** (2003), «Educational Attainment: Analysis by Immigrant Generation », IZA Discussion Paper No. 1943, Institute for the Study of Labour.
D'Addio A.C. (2007), « Intergenerational Transmission of Disadvantage: Mobility or Immobility across Generations? A Review of the Evidence for OECD Countries », OECD Social, Employment and Migration, Working Paper No. 52, Organisation for Economic Cooperation and Development.
De Wenden C. (2012), « France et flux migratoires internationaux », *Territoires 2040 N°5*, Délégation à l'aménagement du territoire et à l'action régionale, La Documentation Française.
Domingues Dos Santos M. and **Wolff F.-C.** (2011), « Human capital background and the educational attainment of second-generation immigrants in France », *Economics of Education Review*, 30, 1085-1096.
Duncan K. and **Sandy J.** (2010), « Examining the achievement test score gap between urban and suburban students », *Education Economics*, 18(3), 297-315.
Dustman C. (2012), « Education of second-generation immigrants », *Economic Policy*, 27(69), 145-185.
Elder T., Goddeeris J. and **Haider S.** (2010), «Unexplained gaps and Oaxaca–Blinder decompositions », *Labour Economics*, 17(1), 284–290
Fabre A. and **Moullet S.** (2004), « Externalités de l'éducation et mobilité intergénérationnelle : application au cas français », *Economie et Prévision*, 5(166), 19-37.
Gang I. and **Zimmerman K.** (2000), « Is Child like Parent? Educational Attainment and Ethnic Origin », *Journal of Human Resources*, 35(3), 550-569.
Hammarstedt M. and **Palme M.** (2006), « Intergenerational Mobility, Human Capital Transmission and the Earnings of Second-Generation Immigrants in Sweden », IZA Discussion Paper No. 1943, Institute for the Study of Labour.
Haveman R. and **Wolfe B.** (1995), "The Determinants of Children's Attainments: A Review of Methods and Findings", *Journal of Economic Literature*, Vol. 33, No. 4, pp. 1829-1878.
Holmlund H., Lindahl M. and **Plug E.** (2011), « The Causal Effect of Parents' Schooling on Children's Schooling: A Comparison of Estimation Methods », *Journal of Economic Literature*, 49(3), 615-51.
Jann B. (2008), « The Blinder-Oaxaca decomposition for linear regression models », *the Stata Journal*, 8(4), 453-479.
Kao G. and **Tienda M.** (1995), « Optimism and Achievement: The Educational Performance of Immigrant Youth », Social Science Quarterly, 76(1), 1-19.
Kessler C. and **Safi M.** (2010), « Immigrant/Native Labour Market Inequalities: A Portrait of Patterns and Trends in France and the United Kingdom, 1990-2007 », Notes & Documents n° 2011-01, Observatoire sociologique du changement, Sciences Po.
Lefranc A. (2010), « Unequal Opportunities and Ethnic Origin: The Labour Market Outcomes of Second-Generation Immigrants in France », American *Behavioral Scientist*, 53(12), 1851-1882.
Lillard L. and **Willis R.** (1994), « Intergenerational Educational Mobility: Effects of Family and State in Malaysia », *Journal of Human Resources*, 29(4), 1126-1166.
McKenzie D. and **Rapoport H.** (2010), « Self-Selection Patterns in Mexico US Migration: The Role of Migration Networks », *The Review of Economics and Statistics*, 92(4), 811–821.
Mœurs D. and **Pailhé A.** (2010), « Position sur le marché du travail des descendants directs d'immigrés en France : les femmes doublement désavantagées ? », *Economie et Statistiques*, 431-432, 129-151.
Mœurs D., Pailhé A. and **Simon P.** (2005), « Persistance des inégalités entre générations liées à l'immigration : l'accès à l'emploi des immigrés et de leurs descendants en France », *Population*, 61(5), 763-801.
Neumark D. (1988), « Employers' Discriminatory Behavior and the Estimation of Wage Discrimination », *Journal of Human Resources*, 23(3), 279-95.
Niknami S. (2010), « Intergenerational Transmission of Education among Immigrant Mothers and their Daughters in Sweden», Working Paper 2010:10, The Stockholm University Linnaeus Center for Integration Studies.
Oaxaca R. (1973), « Male-Female Wage Differentials in Urban Labor Markets », *International Economic Review*, 14(3), 693-709.

Okba M. (2012), « Métier des pères et des descendants d'immigrés : une mobilité sociale davantage liée à l'origine sociale qu'à l'origine géographique », *Dares Analyses*, n°58, Direction de l'Animation de la Recherche, des Etudes et des Statistiques, Ministère du travail, de l'emploi et de la santé, France.

Rong X.-L. and **Grant L.** (1992), « Ethnicity, Generation, and School Attainment of Asians, Hispanics and Non-Hispanics Whites», *The Sociological Quarlerly*, 33(4), 1066-99.

Vallet L.-A. and **Caille J.-P.** (1999), « Migration and integration in France. Academic careers of immigrants? Children in lower and upper secondary school », European Science Foundation Conference "Migration and Inter-Ethnic Relations in Europe, September 23-28th 1999, Obernai, France.

Waters M., and **Eschbach K.** (1995), « Immigration and ethnic and racial inequality in the United States », *Annual Review of Sociology*, 21(1), 419-446.

Wooldridge J. (2002), *Econometric Analysis of Cross Section and Panel Data*. The MIT Press, Cambridge, Massachusetts London, England.

Appendix

Table A.1. Education levels (diploma).

Level of diploma	Level of education (INSEE)	Corresponding French diploma	Theoretical cumulative number of years of schooling
		No diploma	
1	VI	*CEP (Certificat d'études primaires): Primary school degree*	5
2	V bis	*BEPC, brevet : First part of generally secondary school completed*	9
3	V	*CAP, BEP : first vocational-technical degree*	11
4	IV	*BAC, bac professionnel (equivalent to a A*-grade level: general or vovational education)	12
5	III	*Bac + 2 (DUT, BTS, DEUG…) : first two year-university degree*	14
6	II	*Bac + 3 / Bac+4 (Licence/Maîtrise) : Three or four years French university degrees (last year of Licence and first of Master).*	15/16
7	I	*Bac +5 (master degree) and higher degrees (PhD…)*	17

Table A2. Estimations with grade level as parental education.

Explained variable: years of schooling(1)		*Whole sample*	Sec. Gen. Migrants	Natives	*North Africa*	*Southern Europe*	*Northern and Western Europe*	*Eastern Europe*
				By origin				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Intercept	2.237***	2.236***	2.239***	2.119***	2.237***	2.185***	2.370***
		(0.005)	(0.018)	(0.006)	(0.050)	(0.027)	(0.044)	(0.055)
Father's highest diploma	*Without any diploma / CEP*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	'Brevet'	0.089***	0.053**	0.094***	0.045	0.087	0.173*	0.148
		(0.008)	(0.026)	(0.009)	(0.035)	(0.057)	(0.097)	(0.102)
	'CAP/BEP'	0.035***	0.027*	0.037***	0.016	0.058**	-0.024	0.031
		(0.004)	(0.015)	(0.004)	(0.028)	(0.023)	(0.039)	(0.049)
	Baccalauréat	0.090***	0.051**	0.095***	0.055*	0.110**	-0.018	0.023
		(0.007)	(0.021)	(0.007)	(0.031)	(0.044)	(0.042)	(0.095)
	'Bac+2'	0.097***	0.107***	0.094***	0.157***	0.152	0.033	-0.179**
		(0.010)	(0.027)	(0.010)	(0.036)	(0.096)	(0.079)	(0.083)
	'Bac+3' and more	0.136***	0.127***	0.137***	0.122***	0.146***	-0.003	0.112
		(0.009)	(0.023)	(0.009)	(0.032)	(0.051)	(0.064)	(0.084)
Mother's highest diploma	*Without any diploma / CEP*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	'Brevet'	0.103***	0.093***	0.103***	0.050	0.146***	0.186***	0.198**
		(0.007)	(0.021)	(0.007)	(0.031)	(0.036)	(0.066)	(0.082)
	'CAP/BEP'	0.064***	0.063***	0.064***	0.080***	0.146***	0.001***	0.040
		(0.004)	(0.016)	(0.005)	(0.022)	(0.026)	(0.056)	(0.076)
	Baccalauréat	0.116***	0.107***	0.117***	0.126***	0.075*	0.124**	0.081
		(0.007)	(0.018)	(0.008)	(0.027)	(0.040)	(0.047)	(0.058)
	'Bac+2'	0.125***	0.150***	0.121***	0.149***	0.136**	0.170***	0.440***
		(0.008)	(0.022)	(0.009)	(0.033)	(0.055)	(0.049)	(0.050)
	'Bac+3' and more	0.160***	0.171***	0.159***	0.196***	0.039	0.248***	0.241***
		(0.010)	(0.024)	(0.011)	(0.032)	(0.082)	(0.072)	(0.080)
Father's socioprofessional category (PCS)	Blue collar worker	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Shopkeeper	0.083***	0.061***	0.087***	0.043*	0.068***	0.201***	-0.012
		(0.005)	(0.015)	(0.005)	(0.023)	(0.014)	(0.051)	(0.074)
	Executive	0.156***	0.118***	0.160***	0.123***	0.113*	0.247	0.107
		(0.006)	(0.020)	(0.007)	(0.030)	(0.046)	(0.045)	(0.069)
	Intermediate Professions	0.113***	0.080***	0.118***	0.070***	0.085***	0.164***	0.015
		(0.004)	(0.014)	(0.005)	(0.021)	(0.025)	(0.041)	(0.049)
	Employee	0.068***	0.039**	0.071***	0.034	0.076 v	0.129***	-0.064
		(0.005)	(0.016)	(0.005)	(0.023)	(0.036)	(0.045)	(0.074)
	Farmer	0.059***	0.041*	0.062***	0.134*	0.041	0.054	0.019
		(0.005)	(0.025)	(0.005)	(0.070)	(0.033)	(0.062)	(0.088)
	Gender	0.019***	0.025***	0.018***	0.017	0.068***	-0.007	-0.095***
		(0.003)	(0.009)	(0.003)	(0.014)	(0.014)	(0.027)	(0.036)
	Rank in the brotherhood	-0.018***	-0.016***	-0.019***	-0.008*	-0.016*	-0.0212***	-0.034***
		(0.000)	(0.002)	(0.001)	(0.004)	(0.003)	(0.007)	(0.011)
	Divorce of parents during scholarship	-0.056***	-0.046***	-0.058***	-0.033	-0.047*	-0.036	-0.052
		(0.005)	(0.015)	(0.006)	(0.022)	(0.025)	(0.055)	(0.065)
	Natives	*Ref.*	-	-	-	-	-	-
	North-Africa origin	-0.009	-	-	-	-	-	-
		(0.007)	-	-	-	-	-	-
	Southern Europe origin	0.035***	-	-	-	-	-	-
		(0.007)	-	-	-	-	-	-
	Northern and Western Europe	-0.034***	-	-	-	-	-	-
		(0.013)	-	-	-	-	-	-
	Eastern Europe	0.031*	-	-	-	-	-	-
		(0.016)	-	-	-	-	-	-
	Other origins	0.000	-	-	-	-	-	-
		(0.020)	-	-	-	-	-	-
	Controls for birth cohorts	yes	yes	yes	yes	yes	yes	yes
	R^2	0.33	0.30	0.33	0.32	0.22	0.46	0.35
	Nb. of observations	21434	2859	18575	1046	1131	354	248

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata
Note 1: ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note 2: years of schooling are in log.

Table A3. Estimations on the whole sample. *Alternative definition for the years of schooling.*

		Explained variable: years of schooling(2) (1)	(2)
Intercept		1.633*** (0.016)	1.760*** (0.015)
Father's years of schooling (2)		0.109*** (0.007)	- -
Mother's years of schooling (2)		0.168*** (0.007)	- -
Most educated parent's years of schooling (2)		- -	0.194*** 0.006
Father's socioprofessional category (PCS)	Blue collar worker	*Ref.*	*Ref.*
	Shopkeeper	0.123*** (0.008)	0.126*** (0.008)
	Executive	0.235*** (0.009)	0.264*** (0.008)
	Intermediate Professions	0.170*** (0.007)	0.181*** (0.007)
	Employee	0.105*** (0.008)	0.106*** (0.008)
	Farmer	-0.091*** (0.009)	0.129*** (0.008)
Gender		0.022*** (0.004)	0.022*** (0.004)
Rank in the brotherhood		-0.029*** (0.001)	-0.029*** (0.001)
Divorce of parents during scholarship		-0.091*** (0.009)	-0.089*** (0.009)
Natives		*Ref.*	*Ref.*
North-Africa origin		-0.021* (0.011)	-0.017 (0.011)
Southern Europe origin		0.043*** (0.011)	0.042*** (0.011)
Northern and Western Europe		-0.017 (0.019)	-0.014 (0.019)
Eastern Europe		0.030 (0.025)	0.029 (0.025)
Other origins		-0.002 (0.029)	0.005 (0.029)
Controls for birth cohorts		Yes	yes
R^2		0.32	0.21
Nb. of observations		21434	21434

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata
Note 1: ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note 2: years of schooling are in log.

Table A4. Estimations on the whole sample. *Alternative definition for the years of schooling.*

	Explained variable: years of schooling(2) (1)	(2)
Second-generation migrants	0.009 (0.007)	0.012 (0.007)

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata
Note 1: ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note 2: years of schooling are in log.

Table A5. Econometric estimations by origin. *Alternative definition for the years of schooling.*

		Explained variable: years of schooling(2)											
		Sec. Gen. Mig.	Natives	North Africa	Southern Europe	Northern and Western Europe	Eastern Europe	Sec. Gen. Mig.	Natives	North Africa	Southern Europe	Northern and Western Europe	Eastern Europe
		(1)	(2)	(3)	(4)	(5)	(6)	(1bis)	(2bis)	(3bis)	(4 bis)	(5 bis)	(6 bis)
Intercept		1.586***	1.645***	1.317***	1.672***	1.783***	1.748***	1.720***	1.769***	1.427***	1.815***	1.907***	1.900***
		(0.047)	(0.017)	(0.088)	(0.084)	(0.123)	(0.173)	(0.042)	(0.0161)	(0.084)	(0.068)	(0.114)	(0.141)
Father's years of schooling (2)		0.111***	0.109***	0.130***	0.135***	0.009	0.062	-	-	-	-	-	-
		(0.021)	(0.007)	(0.032)	(0.037)	(0.060)	(0.077)	-	-	-	-	-	-
Mother's years of schooling (2)		0.184***	0.164***	0.228***	0.123***	0.169***	0.246***	-	-	-	-	-	-
		(0.020)	(0.007)	(0.031)	(0.039)	(0.055)	(0.078)	-	-	-	-	-	-
Most educated parent's years of schooling (2)		-	-	-	-	-	-	0.208***	0.191***	0.281***	0.168***	0.102*	0.209***
		-	-	-	-	-	-	(0.019)	(0.007)	(0.030)	(0.032)	(0.056)	(0.070)
Father's socioprofessional category (PCS)	Blue collar worker	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Shopkeeper	0.109***	0.128***	0.069*	0.067*	0.226***	0.024	0.090***	0.132***	0.073*	0.067*	0.238***	0.028
		(0.041)	(0.008)	(0.040)	(0.036)	(0.068)	(0.075)	(0.023)	(0.008)	(0.040)	(0.036)	(0.071)	(0.073)
	Executive	0.182***	0.241***	0.173***	0.186***	0.367***	0.107	0.218***	0.269***	0.200***	0.211***	0.404***	0.130
		(0.026)	(0.009)	(0.039)	(0.052)	(0.071)	(0.107)	(0.025)	(0.009)	(0.037)	(0.051)	(0.068)	(0.105)
	Intermediate Professions	0.119***	0.177***	0.098***	0.132***	0.281***	-0.027	0.125***	0.188***	0.095***	0.139***	0.294***	-0.018
		(0.021)	(0.008)	(0.034)	(0.037)	(0.058)	(0.075)	(0.021)	(0.007)	(0.034)	(0.037)	(0.058)	(0.074)
	Employee	0.059**	0.110***	0.047	0.149***	0.123	-0.074	0.056**	0.112***	0.041	0.151***	0.115	-0.111
		(0.026)	(0.009)	(0.036)	(0.051)	(0.081)	(0.111)	(0.026)	(0.009)	(0.036)	(0.051)	(0.083)	(0.115)
	Farmer	0.109**	0.127***	0.240**	0.103*	0.128	0.097	0.110**	0.132***	0.224*	0.104*	0.123	0.098
		(0.041)	(0.008)	(0.119)	(0.056)	(0.093)	(0.141)	(0.041)	(0.008)	(0.118)	(0.056)	(0.094)	(0.139)
Gender		0.043***	0.019***	0.022	0.108***	-0.020	-0.136***	0.041***	0.019***	0.018	0.108***	-0.027	-0.138***
		(0.014)	(0.005)	(0.022)	(0.022)	(0.039)	(0.051)	(0.014)	(0.005)	(0.022)	(0.022)	(0.040)	(0.051)
Rank in the brotherhood		-0.025***	-0.030***	-0.007	-0.033***	-0.034***	-0.054***	-0.025***	-0.030***	-0.007	-0.033***	-0.034***	-0.052***
		(0.003)	(0.001)	(0.006)	(0.005)	(0.009)	(0.013)	(0.003)	(0.001)	(0.006)	(0.005)	(0.009)	(0.013)
Divorce of parents during scholarship		-0.064***	-0.096***	-0.019	-0.100**	-0.109	-0.059	-0.065***	-0.094***	-0.026	-0.096**	-0.100	-0.074
		(0.023)	(0.010)	(0.036)	(0.041)	(0.079)	(0.103)	(0.023)	(0.038)	(0.035)	(0.041)	(0.080)	(0.099)
Controls for birth cohorts		Yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R^2		0.20	0.22	0.23	0.16	0.33	0.25	0.20	0.22	0.23	0.16	0.31	0.25
Nb. of observations		2859	18575	1046	1131	354	248	2859	18575	1046	1131	354	248

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata
Note 1: ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note 2: years of schooling are in log.

Table A6: Two-fold Blinder-Oaxaca decomposition

	Parental education : both parents					*Parental education : most educated parent*				
	Gr. 1: SGM Gr. 2: natives	Gr. 1: North Africa Gr. 2: natives	Gr. 1: Southern Europe Gr. 2: natives	Gr. 1: Northern and Western Europe Gr. 2: natives	Gr. 1: Eastern Europe Gr. 2: natives	Gr. 1: SGM Gr. 2: natives	Gr. 1: North Africa Gr. 2: natives	Gr. 1: Southern Europe Gr. 2: natives	Gr. 1: Northern and Western Europe Gr. 2: natives	Gr. 1: Eastern Europe Gr. 2: natives
Overall										
Mean prediction Group 1	2.451***	2.4898***	2.4336***	2.389***	2.387***	2.451***	2.4898***	2.4336***	2.389***	2.387***
	(0.005)	(0.0084)	(0.0079	(0.017)	(0.019)	(0.005)	(0.0084)	(0.0079	(0.017)	(0.019)
Mean prediction Group 2	2.443***	2.4438***	2.4438***	2.443***	2.443***	2.443***	2.4438***	2.4438***	2.443***	2.443***
	(0.002)	(0.0020)	(0.0020)	(0.002)	(0.002)	(0.002)	(0.0020)	(0.0020)	(0.002)	(0.002)
Difference (Gr. 1 - Gr. 2)	0.007	0.0460***	-0.0101	-0.054***	-0.055***	0.007	0.0460***	-0.0101	-0.054***	-0.055***
	(0.005)	(0.0087)	(0.0081)	(0.017)	(0.019)	(0.005)	(0.0087)	(0.0081)	(0.017)	(0.019)
Explained	-0.006*	0.0501***	-0.0499***	-0.027***	-0.094***	-0.007**	0.0476***	-0.0488***	-0.028***	-0.091***
	(0.003)	(0.0050)	(0.0043)	(0.010)	(0.009)	(0.003)	(0.0048)	(0.0044)	(0.010)	(0.009)
Unexplained	0.014***	-0.0040	0.0397***	-0.026**	0.038**	0.014***	-0.0016	0.0386***	-0.025*	0.035**
	(0.004)	(0.0074)	(0.0072)	(0.013)	(0.016)	(0.004)	(0.0074)	(0.0072)	(0.013)	(0.017)
Breakdown of the 'explained' part										
Parental education	-0.003**	0.0167***	-0.0240***	-0.002	-0.031***	-0.004***	0.0109***	-0.0222***	-0.001	-0.031***
	(0.001)	(0.0024)	(0.0019	(0.004)	(0.004)	(0.001)	(0.0020)	(0.0018)	(0.003)	(0.004)
Other familial characteristics	-0.010***	-0.0001	-0.0289***	-0.000	-0.016***	-.010***	0.0001	-0.0299***	-0.000	-0.016***
	(0.001)	(0.0023)	(0.0020	(0.003)	(0.004)	(0.001)	(0.0024)	(0.0020)	(0.004)	(0.004)
Individual characteristics	0.007***	0.0335***	0.0030	-0.024***	-0.046***	0.008***	0.0365***	0.0034	-0.026***	-0.046
	(0.001)	(0.0021)	(0.0022)	(0.004)	(0.004)	(0.001)	(0.0023)	(0.0024)	(0.005)	(0.004)
Breakdown of the 'unexplained' part										
Parental education	-0.001	0.1396*	-0.0369	-0.197	0.029	0.005	0.1408*	-0.0322	-0.178	0.029
	(0.051)	(0.0788)	(0.861)	(0.134)	(0.147)	(0.044)	(0.0747)	(0.0672)	(0.123)	(0.147)
Other familial characteristics	0.012**	-0.0002	0.0160*	-0.014	0.028	0.012**	0.0008	0.0179*	-0.014	0.028
	(0.004)	(0.0124)	(0.0096)	(0.012)	(0.017)	(0.004)	(0.0122)	(0.0095)	(0.012)	(0.017)
Individual characteristics	0.010	0.0479***	0.0297**	-0.031	-0.119***	0.010	0.0466***	0.0299**	-0.032	-0.119***
	(0.009)	(0.0169)	(0.0122)	(0.027)	(0.044)	(0.009)	(0.0173)	(0.0121)	(0.027)	(0.044)
constant	-0.007	-0.1914**	0.0309	0.217	0.099	-0.013	-0.1899**	0.0229	0.199	0.099
	(0.056)	(0.0898)	(0.0931)	(0.150)	(0.169)	(0.050)	(0.872)	(0.0737)	(0.139)	(0.169)

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata with the Oaxaca command.
Note (1): ***, ** and * stand for significance at the 1%, 5% and 10% level. Robust standard errors stand within parenthesis.
Note (2): the effects of dummy variables corresponding to categorical indicators (father's socio-professional category and cohorts) have been normalized so that the results of the decomposition do not depend of the choice of the base category (Jann, 2008).

Table A7: Three-fold Blinder-Oaxaca decomposition. *Years of schooling of the most educated parent ≤ 9 years.*

	Parental education : both parents					*Parental education : most educated parent*				
	Gr. 1: SGM Gr. 2: natives	Gr. 1: North Africa Gr. 2: natives	Gr. 1: Southern Europe Gr. 2: natives	Gr. 1: Northern and Western Europe Gr. 2: natives	Gr. 1: Eastern Europe Gr. 2: natives	Gr. 1: SGM Gr. 2: natives	Gr. 1: North Africa Gr. 2: natives	Gr. 1: Southern Europe Gr. 2: natives	Gr. 1: Northern and Western Europe Gr. 2: natives	Gr. 1: Eastern Europe Gr. 2: natives
Overall										
Mean prediction Group 1	2.374***	2.400***	2.389***	2.279***	2.321***	2.374***	2.400***	2.389***	2.279***	2.321***
	(0.006)	(0.010)	(0.008)	(0.022)	(0.023)	(0.006)	(0.010)	(0.008)	(0.022)	(0.023)
Mean prediction Group 2	2.354***	2.354***	2.354***	2.354***	2.354***	2.354***	2.354***	2.354***	2.354***	2.354***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Difference	0.019***	0.0452***	0.034***	-0.0751***	-0.032	0.019***	0.0452***	0.034***	-0.0751***	-0.032
	(0.006)	(0.004)	(0.009)	(0.022)	(0.023)	(0.006)	(0.004)	(0.009)	(0.022)	(0.023)
Diff. endowments	-0.000	0.0475***	-0.004	-0.059***	-0.078***	0.000	0.500***	-0.004	-0.061***	-0.079***
	(0.003)	(0.004)	(0.004)	(0.009)	(0.008)	(0.003)	(0.004)	(0.004)	(0.009)	(0.008)
Diff. coefficients	0.009	-0.038	0.031***	-0.022	0.046	0.011	-0.039	0.033***	-0.019	0.054**
	(0.008)	(0.0431)	(0.011)	(0.020)	(0.028)	(0.007)	(0.042)	(0.010)	(0.020)	(0.026)
Diff. interactions	0.009*	0.0357	0.007	0.006	-0.000	0.007	0.034	0.006	0.005	-0.008
	(0.0051)	(0.040)	0.007	(0.013)	(0.023)	(0.004)	(0.039)	(0.006)	(0.013)	(0.021)
Breakdown of the 'endowments' part										
Parental education	-0.000	0.002	-0.000	-0.005**	-0.007**	0.001**	0.009***	0.000	-0.009***	-0.010***
	(0.000)	(0.002)	(0.000)	(0.002)	(0.002)	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)
Other familial characteristics	-0.0165***	-0.013***	-0.022***	-0.006	-0.015***	-0.016***	-0.013***	-0.022***	-0.006	-0.015***
	(0.001)	(0.002)	(0.002)	(0.004)	(0.004)	(0.001)	(0.002)	(0.002)	(0.004)	(0.004)
Individual characteristics	0.016***	0.058***	0.018***	-0.047***	-0.055***	0.015***	0.055***	0.017***	-0.044***	-0.052***
	(0.002)	(0.004)	(0.003)	(0.007)	(0.007)	(0.002)	(0.003)	(0.003)	(0.007)	(0.007)
Breakdown of the 'coefficient' part										
Parental education	-0.145	0.501	-0.174	-0.558	0.048	-0.197	-0.003	-0.180	-0.395	0.105
	(0.252)	(0.424)	(0.307)	(0.725)	(0.677)	(0.209)	(0.442)	(0.261)	(0.537)	(0.475)
Other familial characteristics	0.014*	0.029**	0.010	-0.045**	0.045*	0.015*	0.028**	0.011	-0.049**	0.041*
	(0.008)	(0.011)	(0.011)	(0.022)	(0.023)	(0.0084)	(0.011)	(0.010)	(0.021)	(0.022)
Individual characteristics	0.018	0.037*	0.028*	-0.016	-0.102*	0.018	0.028	0.030**	-0.012	-0.102*
	(0.013)	(0.019)	(0.016)	(0.032)	(0.054)	(0.012)	(0.019)	(0.015)	(0.029)	(0.052)
Constant	0.122	-0.606	0.167	0.598	0.054	0.175	-0.089	0.171	0.438	0.009
	(0.122)	(0.440)	(0.315)	(0.738)	(0.689)	(0.217)	(0.458)	(0.268)	(0.550)	(0.488)
Breakdown of the 'interaction' part										
Parental education	0.001	0.012	0.001	0.013	0.007	-0.000	-0.000	-0.000	0.009	-0.002
	(0.001)	(0.009)	(0.001)	(0.018)	(0.022)	(0.000)	(0.009)	(0.000)	(0.013)	(0.012)
Other familial characteristics	0.005	-0.019	0.008	-0.003	0.012	0.005	-0.017	0.008	-0.003	0.013
	(0.004)	(0.035)	(0.006)	(0.009)	(0.014)	(0.004)	(0.034)	(0.006)	(0.009)	(0.014)
Individual characteristics	0.002	0.042**	-0.001	-0.003	-0.020	0.002	0.052***	-0.002	-0.000	-0.018
	(0.002)	(0.019)	(0.003)	(0.016)	(0.018)	(0.002)	(0.019)	(0.003)	(0.013)	(0.016)

Sources: FQP survey (INSEE; 2003). Computations from the author under Stata with the Oaxaca command.

Note (1): ***, ** and * stand for significance (respectively at the 1%, 5% or 10% level). Robust standard errors stand within parenthesis.

Note (2): the effects of dummy variables corresponding to categorical indicators (father's socioprofessional category and cohorts) have been normalized so that the results of the decomposition do not depend of the choice of the base category (Jann, 2008).